



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 500  
DENVER, COLORADO 80202-2466

AUG 21 1997

Ref: 8P2-W-GW

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Ms. Kathy Turner  
Petroleum Engineering Technician  
Petroglyph Operating Company, Inc.  
6209 North Highway 61  
Hutchinson, Kansas 67502

RE: UIC Minor Permit Modification  
Conversion of Additional Well to  
EPA Area Permit UT2736-00000  
Antelope Creek Waterflood  
Duchesne County, Utah

Dear Ms. Turner:

Your letter of July 17, 1997, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000, is hereby granted.

<u>NAME</u>	<u>LOCATION</u>	<u>EPA WELL PERMIT NO.</u>
Ute Tribal #19-03	NE/NW Section 19 T 5 S - R 3 W Antelope Creek Field Duchesne County, UT	#UT2736-04390

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by minor permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Minor Permit Modification, all terms and conditions of the original permit will apply to the construction, operation, monitoring, and plugging and abandonment of this additional injection well. The proposed well location, well schematic, conversion procedures, plugging and abandonment plan and schematic, submitted by your office, have been reviewed and approved as follows:

- (1) The conversion of this production well has been reviewed, and found satisfactory, therefore, no corrective action is required.
- (2) Maximum injection pressure (Pmax) - the permittee submitted a list of five (5) individual zones, within the Ute Tribal #19-03, which were individually fraced and established an average fracture gradient (Fg) of



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RE: UIC Minor  
Conversion  
EPA Area  
Antelope  
Duchesne

*Scan under  
UT 20736 - 00000  
66  
Modification -  
minor mod  
Approved 8/21/1997  
will need to link  
to UT 20736 - 04390  
in new database also  
under 81 add Well to  
Area Permit.*

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1.03 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This  $F_g$  is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure ( $P_{max}$ ), for this well, may be calculated as shown below:

$$P_{max} = [F_g - 0.433 (S_g)] d$$

Where:  $P_{max}$  = Maximum surface injection pressure at wellhead

$d$  = 4078' shallowest perforations

$S_g$  = Specific gravity of injected water

$$P_{max} = [1.03 - .433 (1.00)] 4078$$

$$P_{max} = 2465 \text{ psig}$$

Until such time as the permittee demonstrates that a fracture gradient other than 1.03 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure ( $P_{max}$ ) for this well shall be 2465 psig.

- (3) The plugging and abandonment plan and schematic, submitted by your office, has been reviewed, and approved.

Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received written authorization to inject by the Environmental Protection Agency. In summary, these requirements for your newly permitted injection well are:

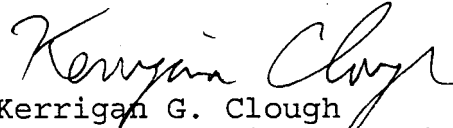
- (1) All conversion is complete and the permittee has submitted a completed Well Rework Record (EPA Form 7520-12).
- (2) The pore pressure has been determined.
- (3) The well has successfully completed and passed a mechanical integrity test (MIT); MIT guidance and EPA form enclosed.

All other provisions and conditions of the permit remain as originally issued, July 12, 1994.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625.

Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE: 8P2-W-GW**. Thank you for your continued cooperation.

Sincerely,



Kerrigan G. Clough  
Assistant Regional Administrator  
Office of Pollution Prevention,  
State and Tribal Assistance

Enclosure: MIT Guidance  
EPA MIT Form

cc: Mr. Ronald Wopsock, Chairman  
Uintah & Ouray Business Committee  
Ute Indian Tribe

Mr. Ferron Secakuku  
Energy & Mineral Resource Dep't.  
Ute Indian Tribe

Mr. Jonas Grant, Director  
Division of Natural Resources  
Ute Indian Tribe

Ms. Elaine Willie  
Environmental Director  
Ute Indian Tribe

Mr. Norman Cambridge  
BIA - Uintah & Ouray Agency

Mr. Gil Hunt  
State of Utah Natural Resources  
Division Oil, Gas, and Mining

Mr. Jerry Kenczka  
BLM - Vernal District

**Mechanical Integrity Test**  
**Casing or Annulus Pressure Test for Well UT2736-04390**

U.S. Environmental Protection Agency  
Underground Injection Control Program, UIC Implementation Section, 8WM-DW  
999 18th Street, Suite 500, Denver, CO 80202-2466  
This form was printed on 08/06/1997.

EPA Witness: \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Test conducted by: \_\_\_\_\_

Others present: \_\_\_\_\_

UTE TRIBAL #19-03

2R UC as of \_\_\_\_/\_\_\_\_/\_\_\_\_

ANTELOPE CREEK

NENW 19 05S 03W

Petroglyph Operating Company, Inc., Hutchinson, KS Op ID PTG01

Last MIT: No record \_\_\_\_/\_\_\_\_/\_\_\_\_

Max Allowed Press \_\_\_\_ psig 199 Max Reported Press 0 psig

Is this a regularly scheduled test? ☐ Yes ☐ No

Initial test for permit? ☐ Yes ☐ No

Test after well rework? ☐ Yes ☐ No

Well injecting during test? ☐ NO ☐ YES \_\_\_\_\_ BPD

Initial casing/tubing annulus pressure \_\_\_\_\_ psig

Does the annulus pressure build back up? ☐ Yes ☐ No

TUBING PRESSURE			
Initial	psig	psig	psig
End of Test	psig	psig	psig
CASING/TUBING ANNULUS PRESSURE			
Time	Test #1	Test #2	Test #3
0 min	psig	psig	psig
5			
10			
15 min			
20			
25			
30 min			
<b>Result</b> (circle)	Pass Fail	Pass Fail	Pass Fail



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*mailed  
8/29/97-lc*

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Petroglyph Operating Company, Inc.  
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Antelope Creek Waterflood  
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Sincerely,

  
Kerrigan G. Clough  
Assistant Regional Administrator  
Office of Pollution Prevention,  
State and Tribal Assistance

Enclosure: MIT Guidance  
EPA MIT Form

cc: Mr. Ronald Wopsock, Chairman  
Uintah & Ouray Business Committee  
Ute Indian Tribe

Mr. Ferron Secakuku  
Energy & Mineral Resource Dep't.  
Ute Indian Tribe

Mr. Jonas Grant, Director  
Division of Natural Resources  
Ute Indian Tribe

Ms. Elaine Willie  
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Mr. Norman Cambridge  
BIA - Uintah & Ouray Agency

Mr. Gil Hunt  
State of Utah Natural Resources  
Division Oil, Gas, and Mining

Mr. Jerry Kenczka  
BLM - Vernal District



# Mechanical Integrity Test

## Casing or Annulus Pressure Test for Well UT2736-04390

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Underground Injection Control Program, UIC Implementation Section, 8WM-DW  
999 18th Street, Suite 500, Denver, CO 80202-2466  
This form was printed on 08/06/1997.

EPA Witness: \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Test conducted by: \_\_\_\_\_

Others present: \_\_\_\_\_

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Petroglyph Operating Company, Inc.,	Hutchinson, KS Op ID PTG01
Last MIT: No record ____/____/____	
Max Allowed Press ____ psig	199 Max Reported Press 0 psig

Is this a regularly scheduled test? ☐ Yes ☐ No  
 Initial test for permit? ☐ Yes ☐ No  
 Test after well rework? ☐ Yes ☐ No

Well injecting during test? ☐ NO ☐ YES \_\_\_\_\_ BPD

Initial casing/tubing annulus pressure \_\_\_\_\_ psig  
 Does the annulus pressure build back up? ☐ Yes ☐ No

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Initial	psig	psig	psig
End of Test	psig	psig	psig
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Ref: 8P2-W-GW

AUG 21 1997

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Concur

Tyler  
 12-w  
 8-20-97  
 DPA  
 8/19/97

SP2-A  
 8/18/97  
 8P2-W-GW/concurrence

8P2-W-GW  
 8/13/97

CEW.  
 8P2-W-GW  
 8/13/97

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Original signed  
Kerrigan G. Clough  
Assistant Regional Administrator  
Office of Pollution Prevention,  
State & Tribal Assistance

Kerrigan G. Clough  
Assistant Regional Administrator  
Office of Pollution Prevention,  
State and Tribal Assistance

Enclosure: MIT Guidance  
EPA MIT Form

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State of Utah Natural Resources  
Division Oil, Gas, and Mining

Mr. Jerry Kenczka  
BLM - Vernal District

FCD: August 11, 1997, Chuck W., F:\DATA\WP\PETROGLF\MNRMD-19.03

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State and Tribal Assistance

Enclosure: MIT Guidance and EPA Form

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Energy & Mineral Resource Dep't.  
Ute Indian Tribe

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~~Northern Ute Tribe~~

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Division of Oil, Gas, and Mining

Mr. Jerry Kenczka  
BLM - Vernal District Office

FCD: August 11, 1997, Chuck W., F:\DATA\WP\PETROGLF\MNRMD-19.03

CEW:  
NOTE changed



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Kerrigan C  
Assistant  
Office of  
State and

Enclosure: MIT Guidance and EPA Form

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Division of Oil, Gas, and Mining

Mr. Jerry Kenczka  
BLM - Vernal District Office

FCD: August 11, 1997, Chuck W., F:\DATA\WP\PETROGLF\MNRMD-19.03

Emmett,  
Please change  
the cc's on last  
page to reflect TAP's  
preferences. Then give  
to Andrea for her  
review.

CEW - I couldn't  
access your "F"  
so I did 8/20/97  
8/20/97 (w/mt)

Thanks,  
JSH  
8:50  
8/20/97

CEW:  
NOTE changes

8/29/97 CW 3103C

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

**AUG 29 1997**

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: **SEP 9 1997**  
**Ms. Kathy Turner**  
**Geology/Petroleum**  
**Engineering Technician**  
**Petroglyph Operating Company, Inc.**  
**6209 North Highway 61**  
**Hutchison, KS 67502**

4a. Article Number

**P 164 014 335**

4b. Service Type

- ☐ Registered ☒ Certified  
☐ Express Mail ☐ Insured  
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

**9-2-97**

5. Received By: (Print Name)

**X Gail Dennis**

6. Signature: (Addressee or Agent)

**X Gail Dennis**

8. Addressee's Address (Only if requested and fee is paid)

**6209 N Hwy 61**  
**Hutchinson KS**

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

8/29/97 CW 3103C  
P 164 014 335

US Postal Service

**Receipt for Certified Mail**

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
<b>Ms. Kathy Turner</b>	
Street & Number	
<b>Geology/Petroleum</b>	
Professional Code	
<b>Engineering Technician</b>	
Post Office	
<b>Petroglyph Operating Company,</b>	
<b>6209 North Highway 61 Inc.</b>	
<b>Hutchison, KS 67502</b>	
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
<b>TOTAL Postage &amp; Fees</b>	<b>\$</b>
Postmark or Date	

PS Form 3800, April 1995